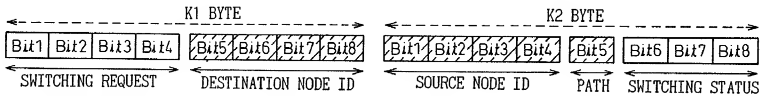
Fig.1



SWITCHING REQUEST

1111	LP-S/SF-P
1110	FS-S
1101	FS-R
1100	SF-S
1011	SF-R
1010	SD-P
1001	SD-S
1000	SD-R
0111	MS-S
0110	MS-R
0101	WTR
0100	EXER-S
0011	EXER-R
0010	RR-S
0001	RR-R
0000	NR

DESTINATION NODE ID

1111	NODE #15
1110	NODE #14
1101	NODE #13
1100	NODE #12
1011	NODE #11
1010	NODE #10
1001	NODE #9
1000	NODE #8
0111	NODE #7
0110	NODE #6
0101	NODE #5
0100	NODE #4
0011	NODE #3
0010	NODE #2
0001	NODE #1
0000	NODE #0

SOURCE NODE ID

1111	NODE #15
1110	NODE #14
1101	NODE #13
1100	NODE #12
1011	NODE #11
1010	NODE #10
1001	NODE #9
1000	NODE #8
0111	NODE #7
0110	NODE #6
0101	NODE #5
0100	NODE #4
0011	NODE #3
0010	NODE #2
0001	NODE #1
0000	NODE #0

PATH

1-LONG PATH
0-SHORT PATH

SWITCHING STATUS

111	MS-AIS
110	MS-RDI
101	(reserved)
100	(reserved)
011	(reserved)
010	Br & Sw
001	Br
000	Idle

Fig.2

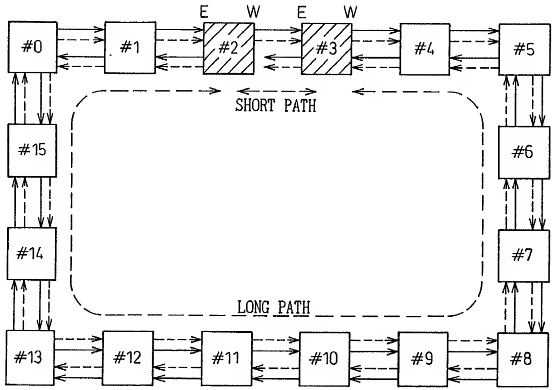


Fig.3

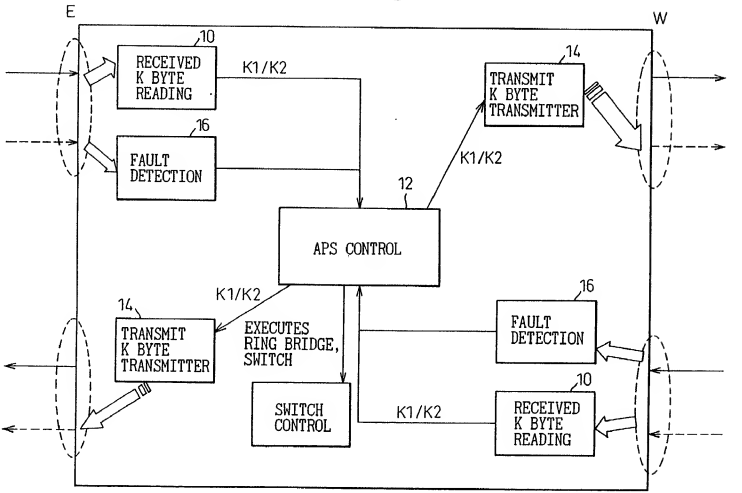

E
W
10
RECEIVED K BYTE READING
K1/K2
14
TRANSMIT K BYTE TRANSMITTER
16
FAULT DETECTION
K1/K2
12
APS CONTROL
K1/K2
14
TRANSMIT K BYTE TRANSMITTER
EXECUTES RING BRIDGE, SWITCH
16
FAULT DETECTION
SWITCH CONTROL
K1/K2
10
RECEIVED K BYTE READING

Fig.4

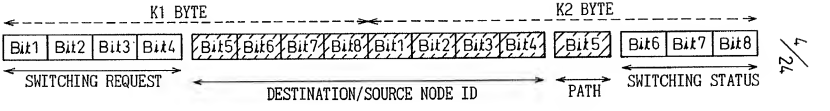


Fig.5

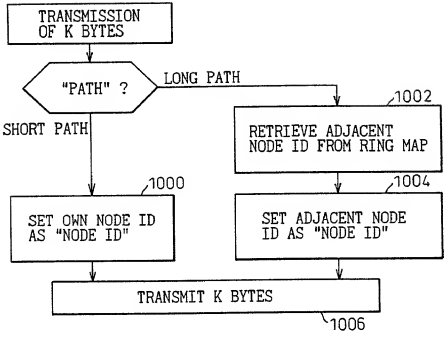

TRANSMISSION OF K BYTES
"PATH" ?
LONG PATH
SHORT PATH
1002
RETRIEVE ADJACENT NODE ID FROM RING MAP
1000
SET OWN NODE ID AS "NODE ID"
1004
SET ADJACENT NODE ID AS "NODE ID"
TRANSMIT K BYTES
1006

Fig.6

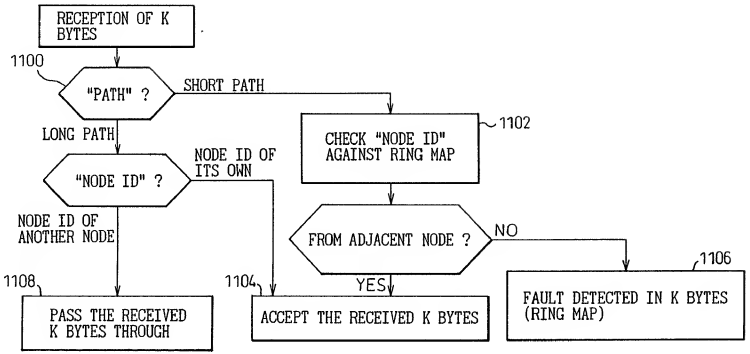

RECEPTION OF K BYTES
1100
"PATH" ?
SHORT PATH
LONG PATH
"NODE ID" ?
NODE ID OF ITS OWN
NODE ID OF ANOTHER NODE
1102
CHECK "NODE ID" AGAINST RING MAP
FROM ADJACENT NODE ?
NO
YES
1106
FAULT DETECTED IN K BYTES (RING MAP)
1108
PASS THE RECEIVED K BYTES THROUGH
1104
ACCEPT THE RECEIVED K BYTES

Fig.7

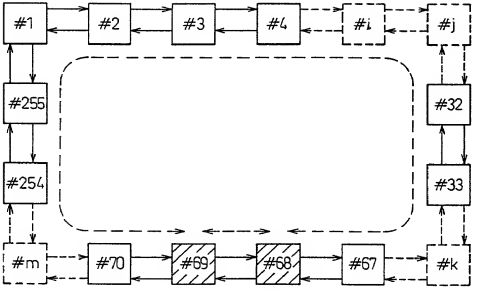


Fig.8

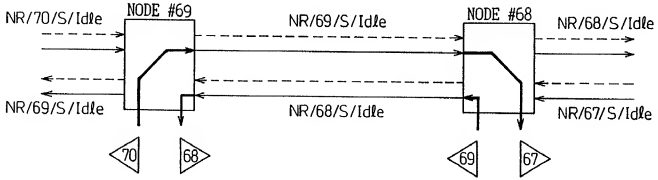
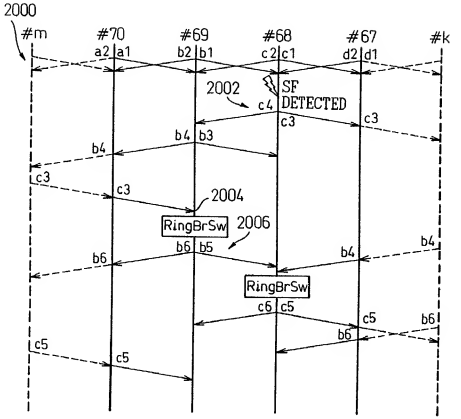


Fig.9



	K1(1-4)	5-8&1-4	K2(5)	K2(6-8)
a1	NR	70	S	Idle
a2	NR	70	S	Idle
b1	NR	69	S	Idle
b2	NR	69	S	Idle
c1	NR	68	S	Idle
c2	NR	68	S	Idle
d1	NR	67	S	Idle
d2	NR	67	S	Idle
c3	SF-R	69	L	Idle
c4	SF-R	68	S	Idle
b3	RR-R	69	S	Idle
b4	SF-R	68	L	Idle
b5	RR-R	69	S	BrSw
b6	SF-R	68	L	BrSw
c5	SF-R	69	L	BrSw
c6	SF-R	68	S	BrSw

Fig.10

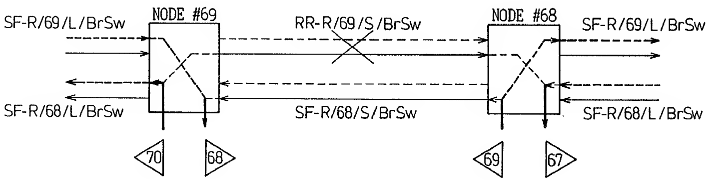

NODE #69
NODE #68
SF-R/69/L/BrSw
SF-R/68/L/BrSw
RR-R/69/S/BrSw
SF-R/68/S/BrSw
SF-R/69/L/BrSw
SF-R/68/L/BrSw
70
68
69
67

Fig.11

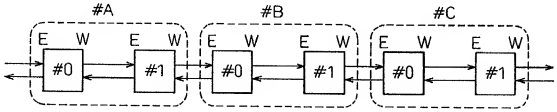


Fig.12

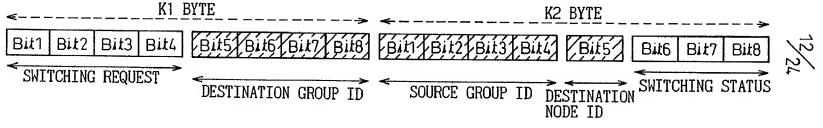


Fig.13

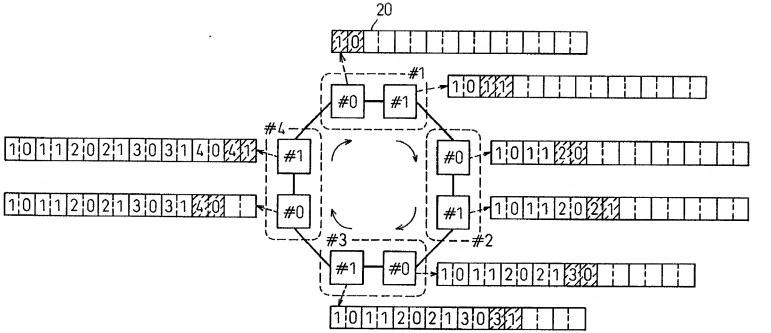


Fig.14

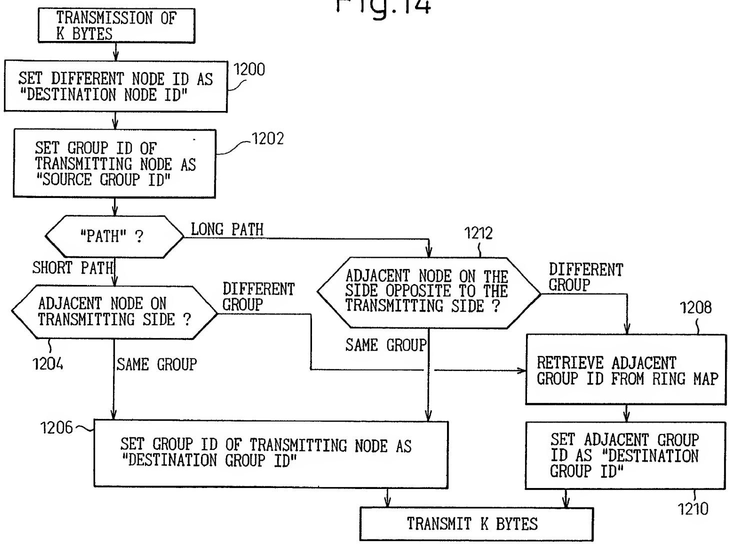

TRANSMISSION OF K BYTES
SET DIFFERENT NODE ID AS "DESTINATION NODE ID"
1200
SET GROUP ID OF TRANSMITTING NODE AS "SOURCE GROUP ID"
1202
"PATH" ?
LONG PATH
SHORT PATH
ADJACENT NODE ON TRANSMITTING SIDE ?
1204
DIFFERENT GROUP
SAME GROUP
ADJACENT NODE ON THE SIDE OPPOSITE TO THE TRANSMITTING SIDE ?
1212
DIFFERENT GROUP
SAME GROUP
RETRIEVE ADJACENT GROUP ID FROM RING MAP
1208
SET GROUP ID OF TRANSMITTING NODE AS "DESTINATION GROUP ID"
1206
SET ADJACENT GROUP ID AS "DESTINATION GROUP ID"
1210
TRANSMIT K BYTES

Fig.15

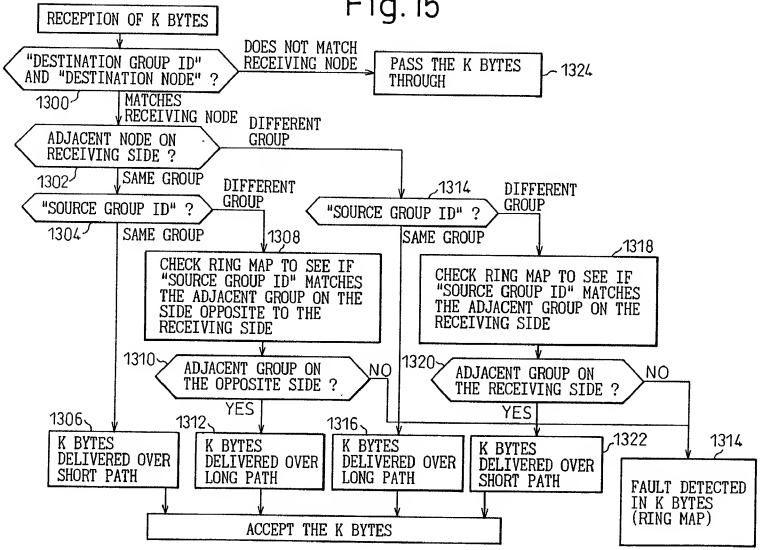


Fig.16

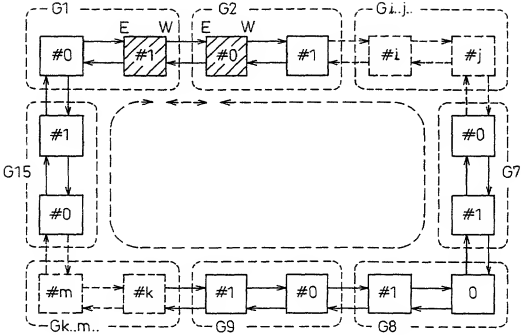
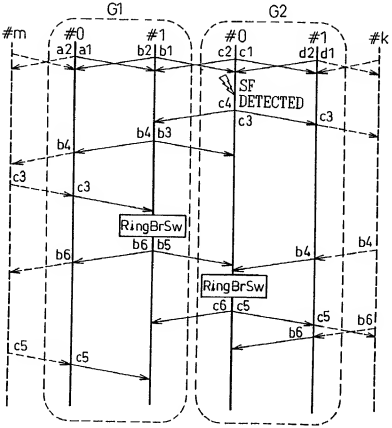


Fig.17



	K1(1-4)	K1(5-8)	K2(1-4)	K2(5)	K2(6-8)
a1	NR	G1	G1	1	Idle
a2	NR	G0	G1	1	Idle
b1	NR	G2	G1	0	Idle
b2	NR	G1	G1	0	Idle
c1	NR	G2	G2	1	Idle
c2	NR	G1	G2	1	Idle
d1	NR	G3	G2	0	Idle
d2	NR	G2	G2	0	Idle
c3	SF-R	G1	G2	1	Idle
c4	SF-R	G1	G2	1	Idle
b3	RR-R	G2	G1	0	Idle
b4	SF-R	G2	G1	0	Idle
b5	RR-R	G2	G1	0	BrSw
b6	SF-R	G2	G1	0	BrSw
c5	SF-R	G1	G2	1	BrSw
c6	SF-R	G1	G2	1	BrSw

Fig.18

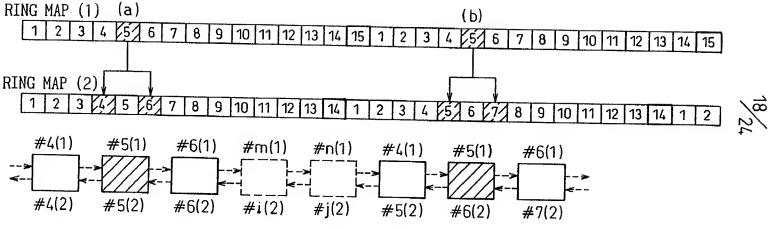

RING MAP (1)
(a)
(b)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
RING MAP (2)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 1 2 3 4 5 6 7 8 9 10 11 12 13 14 1 2
#4(1) #5(1) #6(1) #m(1) #n(1) #4(1) #5(1) #6(1)
#4(2) #5(2) #6(2) #i(2) #j(2) #5(2) #6(2) #7(2)

Fig.19

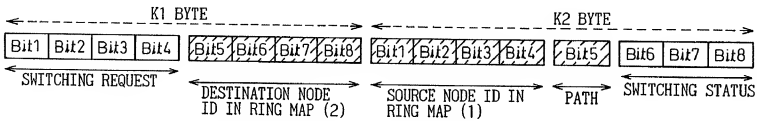

K1 BYTE
K2 BYTE
Bit1
Bit2
Bit3
Bit4
Bit5
Bit6
Bit7
Bit8
Bit1
Bit2
Bit3
Bit4
Bit5
Bit6
Bit7
Bit8
SWITCHING REQUEST
DESTINATION NODE ID IN RING MAP (2)
SOURCE NODE ID IN RING MAP (1)
PATH
SWITCHING STATUS

Fig.20

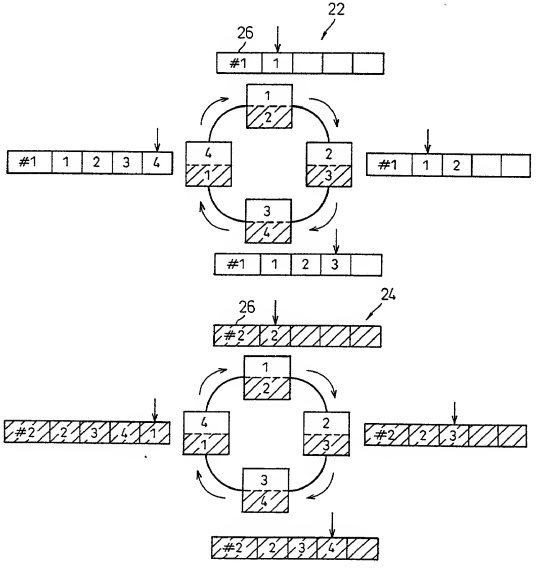


Fig. 21

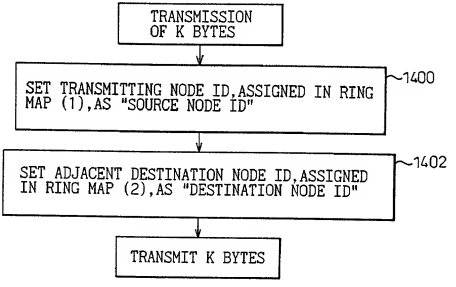

TRANSMISSION OF K BYTES
SET TRANSMITTING NODE ID, ASSIGNED IN RING MAP (1), AS "SOURCE NODE ID"
1400
SET ADJACENT DESTINATION NODE ID, ASSIGNED IN RING MAP (2), AS "DESTINATION NODE ID"
1402
TRANSMIT K BYTES

Fig.22

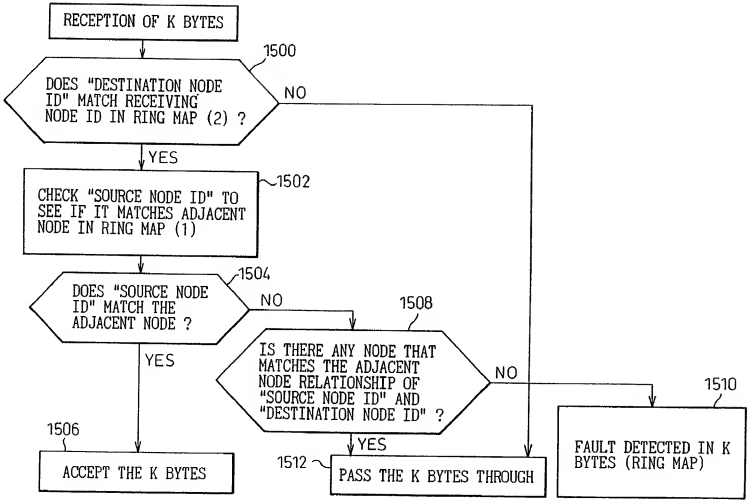


Fig.23

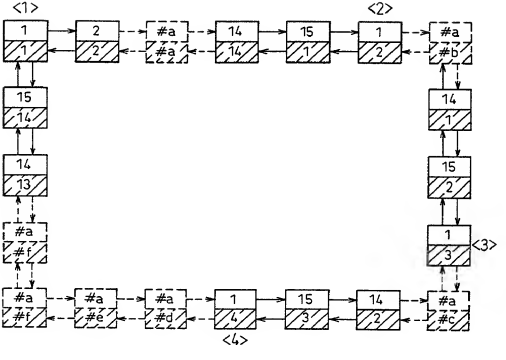
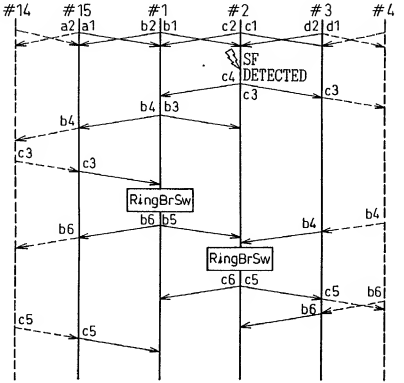


Fig.24



	K1(1-4)	K1(5-8)	K2(1-4)	K2(5)	K2(6-8)
a1	NR	1	15	0	Idle
a2	NR	13	15	0	Idle
b1	NR	2	1	0	Idle
b2	NR	14	1	0	Idle
c1	NR	3	2	0	Idle
c2	NR	1	2	0	Idle
d1	NR	4	3	0	Idle
d2	NR	2	3	0	Idle
c3	SF-R	1	2	1	Idle
c4	SF-R	1	2	0	Idle
b3	RR-R	2	1	1	Idle
b4	SF-R	2	1	1	Idle
b5	RR-R	2	1	0	BrSw
b6	SF-R	2	1	1	BrSw
c5	SF-R	1	2	1	BrSw
c6	SF-R	1	2	0	BrSw